IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. – 8. (Canceled).

9. (Currently Amended) A method for recognizing a valid receiving path for demodulating received signals out of a plurality of receiving paths in a CDMA wireless telecommunication system, comprising the steps of:

receiving at least one set of signals through a transmission path, said set of signals including a predetermined number of received signals;

generating at least two spread codes each of which has its own delay time, said spread codes including a predetermined number of spread code bits;

calculating at least two correlation values of said set of signals with said at least two spread codes, one of said at least two correlation values being a peak correlation value;

forming a path waveform of said path according to a correlation profile based on said at least two correlation values;

comparing said at least two correlation values with a predetermined noise threshold value;

recognizing said path as a noise when one of said at least two correlation values is smaller than said predetermined noise threshold value;

comparing said peak correlation value with a predetermined path recognition threshold value;

determining whether there is a distortion on said path waveform when said peak correlation value is greater than said predetermined path recognition threshold value; and

recognizing said path as a valid receiving path for demodulating said received signals based on the results of ~~comparison of said comparing step and~~ determination of said determining step.

10. (Currently Amended) A method according to claim 9, wherein said step of recognizing said path as a valid receiving path is a step of recognizing said path as a valid receiving path for demodulating said received path when it is determined that ~~said peak~~

~~correlation value is greater than said predetermined path recognition threshold value and that~~ there is no distortion on said path waveform.

11. (Canceled).

12. (Currently Amended) A CDMA wireless telecommunication mobile station for receiving a set of telecommunication signals through a telecommunication path from a base station ~~according to claim 11, further~~ comprising:

a spread code generator for generating at least two spread codes each of which has its own delay time, said spread codes including a predetermined number of spread code bits;

a correlator for calculating at least two correlation values of said set of signals with said at least two spread codes;

a comparator for comparing said correlation values with a predetermined noise threshold value and comparing a peak correlation value with a predetermined path recognition threshold value;

a waveform distortion detector for determining whether there is a distortion on a path waveform of said path represented as a correlation profile, said correlation profile being formed based on said at least two correlation values when said peak correlation value is greater than said path recognition threshold value; and

a path recognizing unit for recognizing said path as a valid receiving path for demodulating said received signals based on said at least two correlation values or recognizing said path as a noise when one of said path correlation value is smaller than said predetermined noise threshold value.

13. (Currently Amended) A CDMA wireless telecommunication mobile station according to claim 12, wherein said at least two correlation values are ~~a~~ said peak correlation value and a correlation value other than said peak correlation value.

14. (Previously Presented) A CDMA wireless telecommunication mobile station according to claim 13, wherein said waveform distortion detector determines whether there is a distortion on said path waveform of said path according to a correlation profile based on a ratio of said peak correlation value to a plurality of correlation values other than said peak correlation value.

15. (Original) A CDMA wireless telecommunication mobile station according to claim 12, wherein said at least two correlation values are neighboring correlation values.

16. (Original) A CDMA wireless telecommunication mobile station according to claim 15, wherein said waveform distortion detector determines whether there is a distortion on said path waveform of said path represented as a correlation profile based on a plurality of ratios of a plurality of respectively neighboring correlation values.

17. (Original) A CDMA wireless telecommunication mobile station according to claim 12, wherein said waveform distortion detector determines whether there is a distortion on said path waveform of said path represented as a correlation profile based on a difference of said at least two correlation values.

18. (Currently Amended) A CDMA wireless telecommunication system comprising a mobile station for receiving a set of telecommunication signals through a telecommunication path from a base station, said mobile station comprising:

a spread code generator for generating at least two spread codes each of which has its own delay time, said spread codes including a predetermined number of spread code bits;

a correlator for calculating at least two correlation values of said set of signals with said at least two spread codes;

a comparator for comparing said correlation values with a predetermined noise threshold value, and comparing a peak correlation value with a predetermined path recognition threshold value;

a waveform distortion detector for determining whether there is a distortion on a path waveform of said path according to a correlation profile, said correlation profile being formed based on said at least two correlation values when said peak correlation value is greater than said predetermined path recognition threshold value; and

a path recognizing unit for recognizing said path as a valid receiving path for demodulating said received signals based on said at least two correlation values or recognizing said path as a noise when one of said peak correlation values is smaller than said predetermined noise threshold value.

19. (Currently Amended) A CDMA wireless telecommunication system according to claim 18, wherein said at least two correlation values are ~~a~~ said peak correlation value and a correlation value other than said peak correlation value.

20. (Previously Presented) A CDMA wireless telecommunication system according to claim 18, wherein said waveform distortion detector determines whether there is a distortion on said path waveform of said path according to a correlation profile based on a ratio of said peak correlation value to a plurality of correlation values other than said peak correlation value.

21. (Previously Presented) A CDMA wireless telecommunication system as claimed in Claim 18, comprising:

wherein said waveform distortion detector determines the existence of said distortion on said path waveform of said path according to a shape of said correlation profile.

22. (Previously Presented) A CDMA wireless telecommunication system as claimed in Claim 18, comprising:

wherein said waveform distortion detector determines the existence of said distortion on said path waveform of said path according to a slope derived from said two correlation values.

23. (New) A method according to claim 10, further comprising the step of determining whether there is a distortion on said path waveform when said peak correlation value is smaller than said path recognition threshold value; and

wherein said path recognizing step further recognizes said path as a valid receiving path when said peak correlation value is smaller than said path recognition threshold value and when said step of determining the existence of the distortion when said peak correlation value is smaller than said path recognition threshold value determines that there is no distortion on said waveform; and

wherein said path recognizing step further recognizes said path as a noise when said step of determining the existence of the distortion when said peak correlation value is smaller than said path recognition threshold value determines that there is a distortion.

24. (New) A method according to claim 23, further comprising the step of storing said path to a memory to use for reevaluation after at least one of said determining steps,

wherein at least one of said determining steps comprises a step of determining whether the distortion is continued from the last cycle of said step of recognizing said path as a valid receiving path according to said stored path.

25. (New) A method according to claim 24, wherein said step of determining whether there is a distortion on said path waveform comprises a step of determining whether the existence of the distortion is continued from the last cycle of said step of recognizing said path as a valid receiving path according to said stored path;

said recognizing step further recognizes said path as a noise when said determining step determines that the existence of the distortion is continued from the last cycle; and

said path storing step further comprising a step of storing said path as a distorted receiving path having high signal level when said determining step determines that the existence of the distortion is not continued from the last cycle.

26. (New) A method according to claim 24, wherein said determining step comprises a step of determining whether the absence of the distortion is continued from the last cycle of said step of recognizing said path as a valid receiving path according to said stored path;

said path recognizing step further recognizes said path as a valid receiving path when said determining step determines that the absence of the distortion is continued from the last cycle; and

said path storing step further comprises the step of storing said path as an undistorted receiving path having low signal levels when said determining step determines that the absence of the distortion is not continued from the last cycle.

27. (New) A CDMA wireless telecommunication mobile station according to claim 12, wherein said waveform distortion detector determines whether there is a distortion on said path waveform when said peak correlation value is smaller than said path recognition threshold value; and

wherein said path recognizing unit recognizes said path as a valid receiving path when said peak correlation value is smaller than said path recognition threshold value and when said waveform detector determines that there is no distortion on said waveform and

recognizes said path as a noise when said waveform detector determines that there is a distortion.

28. (New) A CDMA wireless telecommunication mobile station according to claim 27, further comprising a memory for storing said path for reevaluation after at least one of said determining steps,

wherein said waveform distortion detector determines whether the distortion is continued from the last cycle of said path as a valid receiving path according to said path stored in said memory.

29. (New) A CDMA wireless telecommunication mobile station according to claim 28, wherein said waveform distortion detector determines whether the existence of the distortion is continued from the last cycle of said path as the valid receiving path according to said path stored in said memory;

wherein said path recognizing unit recognizes said path as a noise when said waveform distortion detector determines that the existence of the distortion is continued from the last cycle; and

wherein said memory stores said path as a distorted receiving path having high signal level when said waveform distortion detector determines that the existence of the distortion is not continued from the last cycle.

30. (New) A CDMA wireless telecommunication mobile station according to claim 28, wherein said waveform distortion detector determines whether the absence of the distortion is continued from the last cycle of said path as the valid receiving path according to said path stored in said memory;

wherein said path recognizing unit recognizes said path as a valid receiving path when said waveform distortion detector determines that the absence of the distortion is continued from the last cycle; and

wherein said memory stores said path as an undistorted receiving path having low signal levels when said waveform distortion detector determines that the absence of the distortion is not continued from the last cycle.

31. (New) A CDMA wireless telecommunication mobile system according to claim 18, wherein said waveform distortion detector determines whether there is a distortion

on said path waveform when said peak correlation value is smaller than said path recognition threshold value; and

wherein said path recognizing unit recognizes said path as a valid receiving path when said peak correlation value is smaller than said path recognition threshold value and when said waveform detector determines that there is no distortion on said waveform and recognizes said path as a noise when said waveform detector determines that there is a distortion.

32. (New) A CDMA wireless telecommunication mobile system according to claim 31, further comprising a memory for storing said path for reevaluation after at least one of said determining steps,

wherein said waveform distortion detector determines whether the distortion is continued from the last cycle of said path as a valid receiving path according to said path stored in said memory.

33. (New) A CDMA wireless telecommunication mobile system according to claim 32, wherein said waveform distortion detector determines whether the existence of the distortion is continued from the last cycle of said path as the valid receiving path according to said path stored in said memory;

wherein said path recognizing unit recognizes said path as a noise when said waveform distortion detector determines that the existence of the distortion is continued from the last cycle; and

wherein said memory stores said path as a distorted receiving path having high signal level when said waveform distortion detector determines that the existence of the distortion is not continued from the last cycle.

34. (New) A CDMA wireless telecommunication mobile system according to claim 32, wherein said waveform distortion detector determines whether the existence of the distortion is continued from the last cycle of said path as the valid receiving path according to said path stored in said memory;

wherein said path recognizing unit recognizes said path as a valid receiving path when said waveform distortion detector determines that the absence of the distortion is continued from the last cycle; and

wherein said memory stores said path as an undistorted receiving path having low signal levels when said waveform distortion detector determines that the absence of the distortion is not continued from the last cycle.

35. (New) A base band signal processor for receiving a set of telecommunication signals through a telecommunication path comprising:

a spread code generator for generating at least two spread codes each of which has its own delay time, said spread codes including a predetermined number of spread code bits;

a correlator for calculating at least two correlation values of said set of signals with said at least two spread codes;

a comparator for comparing said correlation values with a predetermined noise threshold value, and comparing a peak correlation value with a predetermined path recognition threshold value;

a waveform distortion detector for determining whether there is a distortion on a path waveform of said path according to a correlation profile, said correlation profile being formed based on said at least two correlation profile values when said peak correlation value is greater than said predetermined path recognition threshold value; and

a path recognizing unit for recognizing said path as a valid receiving path for demodulating said received signals based on said at least two correlation values or recognizing said path as a noise when one of said peak correlation values is smaller than said predetermined noise threshold value.

36. (New) A base band signal processor according to claim 35, wherein said at least two correlation values are said peak correlation value and a correlation value other than said peak correlation value.

37. (New) A base band signal processor according to claim 35, wherein said waveform distortion detector determines whether there is a distortion on said path waveform of said path according to a correlation profile based on a ratio of said peak correlation value to a plurality of correlation value other than said peak correlation value.

38. (New) A base band signal processor as claimed in claim 35, wherein said waveform distortion detector determines the existence of said distortion on said path waveform of said path according to a shape of said correction profile.

39. (New) A base band signal processor as claimed in claim 35, wherein said waveform distortion detector determines the existence of said distortion on said path waveform of said path according to a slope derived from said two correlation values.

40. (New) A base band signal processor according to claim 35, wherein said waveform distortion detector determines whether there is a distortion on said path waveform when said peak correlation value is smaller than said path recognition threshold value; and

wherein said path recognizing unit recognizes said path as a valid receiving path when said peak correlation value is smaller than said path recognition threshold value and when said waveform detector determines that there is no distortion on said waveform and recognizes said path as a noise when said waveform detector determines that there is a distortion.

41. (New) A base band signal processor according to claim 40, further comprising a memory for storing said path for reevaluation after at least one of said determining steps,

wherein said waveform distortion detector determines whether the distortion is continued from the last cycle of said path as a valid receiving path according to said path stored in said memory.

42. (New) A base band signal processor according to claim 41, wherein said waveform distortion detector determines whether the existence of the distortion is continued from the last cycle of said path as the valid receiving path according to said path stored in said memory;

wherein said path recognizing unit recognizes said path as a noise when said waveform distortion detector determines that the existence of the distortion is continued form the last cycle; and

wherein said memory stores said path as a distorted receiving path having high signal level when said waveform distortion detector determines that the existence of the distortion is not continued from the last cycle.

43. (New) A base band signal processor according to claim 41, wherein said waveform distortion detector determines whether the existence of the distortion is continued

from the last cycle of said path as the valid receiving path according to said path stored in said memory;

wherein said path recognizing unit recognizes said path as a valid receiving path when said waveform distortion detector determines that the absence of the distortion is continued from the last cycle; and

wherein said memory stores said path as an undistorted receiving path having low signal levels when said waveform distortion detector determines that the absence of the distortion is not continued from the last cycle.

44. (New) A CDMA wireless telecommunication system for communicating a set of telecommunication signals through a telecommunication path between a mobile station and a base station, comprising:

a spread code generator for generating at least two spread codes each of which has its own delay time, said spread codes including a predetermined number of spread code bits;

a correlator for calculating at least two correlation values of said sets of signals with said at least two spread codes;

a comparator for comparing said correlation values with a predetermined noise threshold value, and comparing a peak correlation value with a predetermined path recognition value;

a waveform distortion detector for determining whether there is a distortion on a path waveform of said path according to a correlation profile, said correlation profile being formed based on said at least two correlation profile values when said peak correlation value is greater than said predetermined path recognition threshold value; and

a path recognizing unit for recognizing said path as a valid receiving path for demodulating said received signals based on said at least two correlation values or recognizing said path as a noise when one of said peak correlation values is smaller than said predetermined noise threshold value.